

### **Amendments to the Claims:**

The listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

Claim 1. (Currently Amended) A method for processing video images to detect an event of interest, comprising the steps of:

[[.]] receiving a video signal [[(10)]] representing the video images to be processed;

[[.]] extracting [[(1)]] at least one point feature from the video signal;

[[.]] tracking [[(2)]] the position and movement of the at least one point feature within the video images to generate a corresponding at least one track, each representing a corresponding point feature;

[[.]] using [[(3)]] an iterative learning process to derive a normal pattern of ~~behaviour~~ behavior for each track;

[[.]] comparing [[(4)]] present ~~behaviour~~ behavior of the at least one track to the respective normal pattern of ~~behaviour~~ behavior; and

[[.]] in response to the present ~~behaviour~~ behavior falling outside the normal pattern of ~~behaviour~~ behavior, generating [(5)] an alarm signal [(20)].

Claim 2. (Currently Amended) A method according to claim 1, wherein the alarm signal [(20)] causes at least one of the following effects:

[[.]] draw the attention of an operator;

[[.]] place an index mark at the appropriate place in recorded video data;  
and

[[.]] trigger selective recording of video data.

Claim 3. (Currently Amended) A method according to claim 1 ~~or claim~~ 2, wherein the learning process [(3)] accumulates data representing the ~~behaviour~~ behavior of the track(s) over a period of time in a four-dimensional histogram, said four dimensions representing x-position, y-position, x-velocity and y-velocity, of the track(s) within the video image.

Claim 4. (Currently Amended) A method according to claim 3, wherein the learn ~~behaviour~~ behavior stage segregates the tracks according to a velocity threshold; wherein tracks moving at a velocity below the velocity threshold are considered stationary while tracks moving at a velocity in excess of

the velocity threshold are considered mobile; wherein data concerning the mobile tracks is stored in said four-dimensional histogram, data concerning the stationary tracks being stored in a two-dimension histogram, said two dimensions representing x-position and y-position within the video image.

Claim 5. (Currently Amended) A method according to ~~either claim 3, or claim 4~~ wherein a cell size of the four-dimensional histogram varies in accordance with a measured speed in the image of each respective track.

Claim 6. (Currently Amended) A method according to ~~any of claims 3-5~~ claim 3, wherein the histogram is periodically de-weighted in order to bias the result of the learning process  $[(3)]$  towards more recent events.

Claim 7. (Currently Amended) A method according to ~~any preceding claim 1~~, wherein the comparison process  $[(4)]$  classifies a track according to a comparison of the frequency of occupation of the corresponding histogram cell with an occupancy threshold.

Claim 8. (Currently Amended) A method according to claim 7 wherein the comparison process  $[(4)]$  acts to classify as normal ~~behaviour~~ behavior a track adjacent or near a cell which is above the occupancy threshold, despite the track appearing in a cell below the occupancy threshold, where one cell is

considered to be near another if the distance between them is below a predetermined distance threshold.

Claim 9. (Currently Amended) A method according to ~~any preceding~~ claim 1, wherein abnormal tracks are filtered, whereby an active alarm signal ~~[(20)]~~ is generated in response to an abnormal track which resembles a number of other abnormal tracks, in terms of at least one of position, velocity and time.

Claim 10. (Currently Amended) A method according to ~~any preceding~~ claim 1, wherein abnormal tracks are filtered, whereby an active alarm signal ~~[(20)]~~ is generated in response only to an abnormal track which has been classified as abnormal on a predetermined number of occasions.

Claim 11. (Currently Amended) A method according to ~~any preceding~~ claim 1, wherein abnormal tracks are filtered, whereby an active alarm signal ~~[(20)]~~ is generated in response only to a track being classified as abnormal for the first time.

Claim 12. (Currently Amended) A method according to ~~any preceding~~ claim 1, wherein abnormal tracks are filtered, whereby an active alarm signal ~~[(20)]~~ is generated only in response to a filtered version of the classification rising above a predetermined threshold value.

Claim 13. (Currently Amended) A method according to ~~any preceding~~ claim 1, wherein subsequent active alarm signals  $[(20)]$  are inhibited for a predetermined time interval after a first active alarm signal  $[(20)]$  has been produced.

Claim 14. (Currently Amended) A method according to ~~any preceding~~ claim 1, wherein subsequent active alarm signals  $[(20)]$  are inhibited if caused by an abnormal track within a predetermined distance of another track which has previously generated an alarm.

Claim 15. (Currently Amended) Apparatus for processing video images to detect an event of interest, comprising:

$[-]$  a source of video images, producing a video signal  $[(10)]$  representing the video images to be processed;

$[-]$  a feature extraction device  $[(1)]$  receiving the video signal and producing data  $[(12)]$  representing at least one point feature detected within the image;

$[-]$  a feature tracking device  $[(2)]$  receiving the data  $[(12)]$  representing point features and producing data  $[(14)]$  representing tracks,

being representative of the position and speed of each respective point feature, within the image;

[[(-)] a learning device [[[3)]] receiving the data [(14)] representing the tracks and producing a signal [(16)] representing a range of ~~behaviour~~ behavior considered normal by the learning device, in response to operation of a learning process on the data [(14)] representing the tracks;

[[(-)] a classification device [(4)] receiving both the signal [(16)] representing the normal range of ~~behaviour~~ behavior of the tracks and the data [(14)] representing the tracks, being adapted to compare the signal [(16)] and the data [(14)] and to issue a normal/abnormal signal [(18)] in accordance with the outcome of such comparison; and

[[(-)] an alarm generation device [(5)] receiving the normal/abnormal signal [(18)] and generating at least one active alarm signal [(20)] in response to the normal/abnormal signal indicating abnormal ~~behaviour~~ behavior of at least one track.

Claims 16.-17. (Cancelled)